

**CALIFORNIA URBAN WATER AGENCIES**

March 9, 1994

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California Urban Water Agencies (CUWA) represents California's eleven largest urban water agencies, serving over 20 million consumers and three-fourths of the state's economic activity. CUWA is concerned with the decline of aquatic resources in the Sacramento-San Joaquin Delta and San Francisco Bay ecosystem (hereafter Delta).

The CUWA Board of Representatives strongly supports development of a standard that protects Delta estuarine habitat. CUWA members have in the past supported efforts to address the causes of this decline and will continue to do so in the future. It is from this positive perspective that the CUWA Board submits its comments regarding the U.S. Environmental Protection Agency's (EPA) proposed rule: "Water Quality Standards for Surface Waters of the Sacramento River, San Joaquin River, and San Francisco Bay and Delta of the State of California," dated January 6, 1994 (40 CFR part 131 [OL-FRL-4783-6]).

In EPA's January 6, 1994 proposed rule, EPA recognized the need for changes to the proposed standards. Both before and since the proposed rule was released, EPA has recognized the need for innovative approaches to Delta protection that will minimize water supply and economic impacts, while achieving the desired environmental benefits. Because CUWA member agencies are collectively responsible for most of the water supply infrastructure that supports the State's \$800 billion economy, we share EPA's expressed interest in finding ways to protect both the environment and the State's economy. Accordingly, CUWA members have agreed on a common set of recommendations to the EPA in support of efforts to protect the Delta.

This letter does not address issues of State/Federal jurisdiction. Rather, this letter focuses on an approach that CUWA believes would be as effective or more effective than the EPA proposal in protecting estuarine habitat and fishery resources, balanced with reduced water supply and economic impacts. CUWA strongly recommends that its approach be implemented as expeditiously as possible.

This letter transmits to EPA the results of a 4-month CUWA review of the proposed rule, the scientific basis for the rule, the potential water costs associated with likely compliance scenarios, and a number of proposed refinements to the rule. This review was conducted by a team of independent experts and technical representatives from several CUWA member agencies. Their findings and conclusions are summarized in Attachment 1 and explained in more detail in a "Technical Comments" report (Attachment 2). The findings presented in the Technical Comments form the basis of the CUWA Board's position regarding the proposed rule, which is summarized in this letter. The key points of CUWA comments are:

1. CUWA recommends adoption of a Suisun Estuary Protection Standard, to be met at the Confluence and Chipps Island, which would provide a level of protection for the estuary which is as effective or more effective than the EPA proposal in protecting estuarine habitat and fishery resources and is fully consistent with EPA's stated goals, with lower water supply impacts. CUWA does not support extending the standard to include Roe Island/Port Chicago because this may result in counterproductive environmental effects.
2. The goals of EPA's proposed Fish Migration and Cold-Water Habitat Criteria are not met by the EPA proposal but are rather more appropriately addressed by a basin-wide management plan developed to control the full range of variables which affect salmon smolt survival.
3. A striped bass spawning standard should not be set as proposed. Action to improve striped bass spawning habitat would be better managed in a multi-species planning effort and should be consistent with USF&WS and NMFS recovery plans for threatened and endangered species. Such action should also be consistent with the State's program to regulate and control agricultural drainage.
4. Now is the time for action on Delta protective standards. CUWA urges that appropriate standards be promulgated in 1994 through a State and Federal partnership.

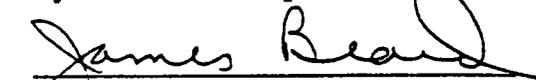
A Look to the Future

CUWA appreciates EPA's open communication in the development and analysis of the proposed standards. Our comments are made in the spirit of cooperation and in the hope that EPA and the SWRCB can jointly support protective Delta water quality standards and their implementation. The approach we have proposed in these comments, along with a long-term habitat conservation effort, will meet the goals of the EPA and others concerned about the decline of Delta resources.

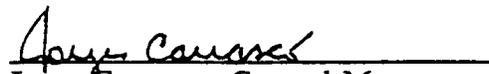
We look forward to working with EPA, SWRCB, and others to implement an appropriate standard and a long-term program to address the full range of issues in the Bay/Delta ecosystem. CUWA believes that the long-term outlook for environmental resources in the Delta and Central Valley watershed can be improved substantially through a cooperative, multi-agency process leading to implementation of a general recovery plan for these environmental resources. It is in the interests of CUWA member agencies, their customers, and California in general to bring many of these issues to resolution in the near future.

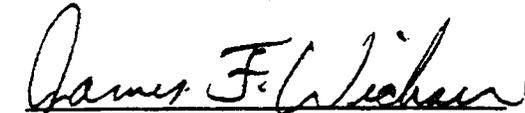
Sincerely,

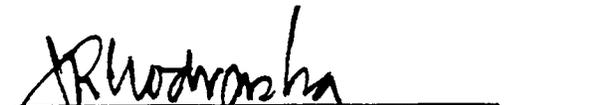
California Urban Water Agencies
By its Board of Representatives


James Beard, General Manager
Alameda County Water District


Walter J. Bishop, General Manager
Contra Costa Water District

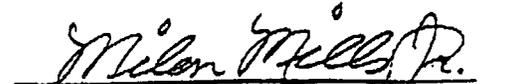

Jorge Carrasco, General Manager
East Bay Municipal Utility District

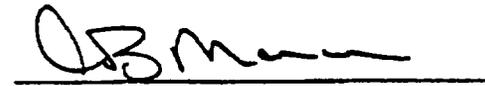

James Wickser, Assistant
General Manager-Water
Los Angeles Department of
Water and Power


John Wodraska, General Manager
Metropolitan Water District of Southern
California

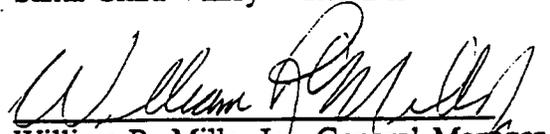

Stanley E. Sprague, General Manager
Municipal Water District of Orange County


Lester A. Snow, General Manager
San Diego County Water Authority


Milon Mills, Jr., Director
San Diego Water Utilities Department


Anson Moran, General Manager
San Francisco Public Utilities
Commission


Ronald R. Esau, General Manager
Santa Clara Valley Water District


William R. Mills, Jr., General Manager
Orange County Water District

Attachment 1.

SUPPLEMENTARY CUWA COMMENTS

In addition to its basic comments, CUWA herewith transmits an abstract of its review of the EPA's proposed standards, along with a list of suggestions for implementation of the CUWA-recommended plan. More detailed comments upon which this abstract is based are attached (Attachment 2).

Review of the Estuarine Habitat Criteria

The Scientific Basis for the CUWA Recommendation for a Suisun Estuary Standard

1. The CUWA review of the scientific basis for the estuarine habitat standard resulted in general concurrence that there has, indeed, been a serious decline in Delta aquatic resources and that reduction of spring outflow and resulting alteration of estuarine processes is one of the many causes of that decline.

CUWA further concurs with EPA that there is a relationship between the position of the 2 ppt isohaline, and therefore the freshwater outflow from the Sacramento-San Joaquin rivers, and the processes necessary for a healthy estuary. Therefore, there is a need for a water quality standard as a feature of a program for recovery of the Delta ecosystem. However, CUWA believes that some of the relationships are more complex and much less certain than those proposed by the San Francisco Estuary Project and used as the basis for the EPA proposed rule. Based on an extensive literature review and independent analysis of the available data, CUWA determined:

- When the average location of the 2 ppt isohaline (hereafter termed "X2" and measured in kilometers upstream from the Golden Gate Bridge) is upstream of the confluence of the Sacramento and San Joaquin rivers, the relationships between X2 and abundance are reliable. The prediction of low abundance under such conditions is substantiated by both the abundance versus X2 relationships and the preponderance of the scientific literature.
- When X2 is located at or near Chipps Island, the X2 versus abundance relationships show that abundance increases. Although there is less certainty in the relationships for this reach of the estuary, CUWA performed a number of other analyses which suggest that estuarine processes in Suisun Bay are enhanced by this condition. CUWA found that the habitat of a majority of estuarine species has its greatest extent under this condition.

The benefits of locating X2 at or near Chipps Island include the following: 1) placement of the 2 ppt to 10 ppt brackish water zone in the Suisun Bay Region; 2) placement of the turbidity maxima in Suisun Bay; 3) helping to ensure transport of eggs, larvae, and nutrients into the shallow-water areas of the Suisun Bay complex; 4) allowing mixing of freshwater and saltwater in the Suisun Bay region and the dispersal of eggs, larvae, and

nutrients; 5) reducing predation and competition which is affected by the density of fish; and 6) promotion of increased phytoplankton and zooplankton by increasing the residence time of nutrients in shallow-water habitat in the estuary.

This finding is consistent with the preponderance of the scientific literature cited by EPA in the references to its proposed rule.

- However, when the average X2 is located at or downstream of Roe Island in the western end of Suisun Bay, CUWA found that the uncertainty in the X2 versus abundance relationships increased dramatically, and the location of X2 explains less of the variance in the data. Based on analysis of: 1) X2 versus abundance indices for estuarine species not considered by SFEP or EPA, 2) an analysis of habitat conditions in the estuary, and 3) on an analysis of coabundance, CUWA also found many indications that locating X2 at or downstream of Roe Island reduces habitat for many species and places the entrapment zone downstream of the Suisun estuary. This may have adverse impacts on some estuarine species such as threadfin shad (through loss of habitat) and the endangered delta smelt (through promotion of competing species).
- Further, to adjust abundance indices to account for factors identified by CDF&G and to account for calculation problems such as those recently identified by Jassby, *et. al* (1994), CUWA re-calculated a number of the abundance indices used by EPA. Based on these corrected abundance versus X2 relationships, CUWA concurs with Jassby *et. al.* (1994) that the abundance versus X2 relationships are less certain and less robust than indicated in the preliminary analysis done by SFEP. The average position of X2 therefore explains substantially less of the variation in abundance than that postulated by SFEP. This suggests that 1) other factors are important constraints on ecosystem health and 2) factors such as loss of habitat, pollution, and exotic species are more important than suggested by the preliminary SFEP analysis.

CUWA's Proposed Alternative

To address the need for transport and to place key estuarine processes in the Suisun Estuary, CUWA believes that the focus of any regulation should be to assure that the brackish water zone (2 ppt to 10 ppt salinity) downstream of the Confluence and at or beyond Chipps Island will be maintained for a specified number of days during the period from February through June, the number of days to be determined as follows:

- The Sacramento River Index for the period February through June will be calculated at the beginning of the compliance period and updated at least monthly. The February-June Sacramento River Index is the appropriate index because it is the best estimate of the available water supply during the regulatory period.
- For a given Sacramento River Index, the number of days of compliance at the Confluence and Chipps Island would be determined based on a weighted least squares

regression of the hydrology during the period 1968-1975, a period for which measured salinity data are available. Extending the period to include the extreme events (such as flood alternating with drought from 1976 through 1992) is unnecessary because it does not appear to significantly alter the results of the 1968-1975 regression.

- The number of days of compliance at each point would be updated at each re-calculation of the Sacramento River Index, but would not exceed the number of days remaining in the February through June regulatory period. This approach is preferred because it will best reflect hydrology during the regulatory period, while other indices take into account other factors which may be unrelated to accomplishing the goal of providing transport and brackish water habitat during the critical winter-spring period.
- Compliance would be based on achieving any one of the following requirements at the compliance point: 1) average daily salinity of 2 ppt at the compliance point, or 2) 14-day average salinity at the compliance point, or 3) maintenance of an outflow calculated to maintain average X2 at a steady state condition. This will prevent short-term extreme wind or tidal events from inappropriately causing non-compliance, as long as the required outflow is provided.

The proposed Suisun Estuary Standard would have significant benefits. It would protect the beneficial uses of the estuary by maximizing suitable habitat in Suisun Bay. The proposed standard would meet the needs of the estuary without extending management beyond the limits of our confidence in the data and data relationships.

To address issues which will arise in implementing its recommended Suisun Estuary Standard, CUWA also recommends the following:

1. All parties involved in promulgation and implementation of the CUWA-recommended Suisun Estuary Standard, including EPA, SWRCB, NMFS, USF&WS, USBR, DWR, CDF&G and others should consult to ensure that implementation of the proposed standard does not have adverse impacts on threatened or endangered species. Of particular concern is the impact of the standard on carryover storage needed to ensure low-temperature releases to the upper Sacramento River for winter-run chinook salmon.
2. Salinity measurement should be allowed near the surface, rather than at the bottom, because that is the standard measurement technique to reduce measurement difficulties. Surface electrical conductivity (EC) would be measured and these measurements would be converted to bottom salinity using well-established conversions. This is not intended to affect the position of the 2 ppt isohaline.
3. The appropriate agency(s) should develop a comprehensive monitoring and research program which would result in better understanding of how abundance and distribution of aquatic and marsh wetlands species are related to a full range of potential causative factors in the Delta and upstream areas. The purpose of the monitoring program would be to measure how the

estuarine standard is meeting its objectives and how other actions, such as those to restore habitat, are contributing to estuarine health. Any regulatory approach should allow for incorporation of the results of this program in the future. This is important because any standard must reflect changed conditions in the estuary to ensure that it continues to meet its goal of protecting beneficial estuarine habitat uses.

4. A water supply impact threshold (cap) should be established, beyond which a standard would be met with purchased water paid for by an environmental fund established for this purpose and supported by payments by the basin water users. This will ensure that the goals of the Suisun Estuary Standard are met in an economically viable manner.

5. All parties involved in promulgation and implementation of the CUWA-recommended Suisun Estuary Standard, including EPA, SWRCB, NMFS, USF&WS, USBR, DWR, CDF&G and others should coordinate with USF&WS and NMFS to address issues such as QWEST and take limits to ensure that cross delta transfers are feasible. As EPA notes in the Regulatory Impacts Analysis, transfers are a critical element of reducing the water supply impacts of a standard.

6. To avoid confusion and thus ensure orderly and prompt compliance, a compliance schedule should be established which would phase in requirements relative to a schedule for all Delta watershed users to appropriately share water supply impacts. Phasing is also appropriate in recognition of the need for operators to develop procedures for compliance, the need for the State Water Resources Control Board to address water allocation issues.

7. All parties involved in promulgation and implementation of the CUWA-recommended Suisun Estuary Standard, including EPA, SWRCB, NMFS, DWR, USF&WS, USBR, CDF&G and others should develop and implement a long-term multi-species plan for the Delta.

8. Habitat enhancement efforts in the Delta should be coordinated with similar efforts in upstream areas to concurrently meet both objectives.

9. A multi-species ecosystem approach to long-term Delta protections should be developed along with commencement of a joint State/Federal process, guided by the requirements of the California Environmental Quality Act and the National Environmental Policy Act, to develop a comprehensive water resources management plan for the estuary, addressing the many factors responsible for the decline in Delta resources including consideration of a full range of alternatives.

Review of the Fish Migration and Cold-Water Habitat Criteria

The Salmon Smolt Survival Index proposed under the Fish Migration and Cold-Water Habitat Criteria was developed by USF&WS, which has often noted that there are limits to its application. Consistent with the concerns of the USF&WS, CUWA analysis of the proposed Fish Migration and Cold-Water Habitat Criteria indicates that the proposed criteria is not the

appropriate tool for accomplishing EPA's stated goals. Because the index is not valid over a wide range of conditions and operational scenarios likely to occur, compliance with the standard would be impossible under some circumstances, regardless of water project actions.

CUWA believes that the appropriate tool should be used to address salmon smolt survival issues and that, in lieu of the Fish Migration and Cold-Water Habitat Criteria, water management and other management provisions for ensuring salmon smolt survival should be developed by the appropriate federal and state agencies.

Review of the Fish Spawning Criteria

A striped bass spawning standard should not be set as proposed because 1) spawning habitat is not generally considered as the limiting factor in striped bass populations, and 2) actions intended to increase striped bass populations would be inconsistent with the protection of threatened and endangered species (winter-run chinook salmon and delta smelt). The goal of the proposed rule is to increase striped bass spawning success by reducing electrical conductivity in the San Joaquin River. Implementation of any standard should be coordinated with and consistent with USF&WS and NMFS recovery plans for threatened and endangered species. Such action should also be consistent with the State's program to regulate and control agricultural drainage.

Reference:

Jassby, Alan, *et. al.* 1994. *Isohaline Position as a Habitat Indicator for Estuarine Population.* Journal of Environmental Management (in press).